

CLAIMS:

Please amend the claims as follows:

1-4. (Canceled)

5. (Currently Amended) A method for operating a radiotelephone system, the method comprising:

at one or more mobile stations of the radiotelephone system, detecting other mobile stations to which radio propagation conditions are sufficiently good;

at the one or more mobile stations, communicating information about the detected mobile stations to a base station of the radiotelephone system;

at a first mobile station, after the detecting the other mobile stations to which the radio propagation conditions are sufficiently good and after the communicating the information about the detected mobile stations, requesting communication with a second mobile station; and

at the base station, if the radio propagation conditions between the first mobile station and the second mobile station are sufficiently good, instructing the first mobile station and the second mobile station to establish direct communication.

6. (Previously Presented) The method of claim 5 further comprising:

at the base station, receiving the communication request from the first mobile station; and

from the information about the detected mobile stations from the first mobile station and the second mobile station, determining if the first mobile station and the second mobile station may initiate direct communication.

7. (Previously Presented) The method of claim 5 further comprising:

determining if each of the first mobile station and the second mobile station is a detected mobile of the other mobile station.

8. (Original) The method of claim 6 further comprising:
at the base station, determining a location of the first mobile station;
determining a location of the second mobile station; and
determining information about relative proximity of the first mobile station and the second mobile station based on the location of the first mobile station and the location of the second mobile station.

9. (Original) The method of claim 5 wherein instructing the first mobile station and the second mobile station to establish direct communication comprises:
initiating a first communication link between the base station and the first mobile station;
communicating a direct communication instruction to the first mobile station;
initiating a second communication link between the base station and the second mobile station;
communicating a direct communication instruction to the second mobile station;
terminating the first communication link and the second communication link.

10. (Original) The method of claim 5 wherein detecting other mobile stations comprises:
detecting respective uplink transmissions from respective mobile stations to base stations of the radiotelephone system.

11. (Previously Presented) The method of claim 10 wherein detecting other mobile stations further comprises:
determining a received signal strength for a detected uplink transmission from a mobile station;
if the received signal strength exceeds a threshold, identifying the mobile station as a detected mobile station.

12. (Previously Presented) The method of claim 5 further comprising:
at the first mobile station, in response to the instruction to establish direct communication, entering a packet-based connectionless communication mode with the second mobile station.

13. (Original) The method of claim 12 wherein packet-based connectionless communication mode comprises entering an Opportunity Driven Multiple Access relay mode.

14. (Currently Amended) A method for operating a base station in a radiotelephone system, the method comprising:
receiving, from respective mobile stations of the radiotelephone system, information about relay candidates of the respective mobile stations;
storing the information in respective relay candidate lists;
after the receiving the information about the relay candidates and after the storing the information in the respective relay candidate lists, receiving a request from a first mobile station to initiate a call with a second mobile station in the radiotelephone system;
based at least in part on a relay candidate list associated with the first mobile station, determining if the second mobile station is physically close to the first mobile station; and
if so, instructing the first mobile station and the second mobile station to enter a relay mode for direct link communication.

15. (Original) The method of claim 14 wherein instructing the first mobile station and the second mobile station to enter a relay mode comprises:
communicating information about the relay mode over a first link with the first mobile station;
communicating information about the relay mode over a second link with the second mobile station; and

terminating both the first link and the second link.

16. (Original) The method of claim 14 further comprising:
receiving from respective mobile stations of the radiotelephone system
information about relay candidates of the respective mobile stations;
storing the information in respective relay candidate lists; and
receiving updates from the respective mobile stations for updating the
respective relay candidate lists.

17. (Currently Amended) A radiotelephone comprising:
a radio communication circuit configured for two-way radio
communication with remote radio devices;
a controller configured to control the radio communication circuit;
means for detecting other radiotelephones to which radio propagation
conditions are sufficiently good; and
a memory configured to store information about the detected
radiotelephones in the relay candidate list, wherein [[a]] the controller is configured to
control the radio communication circuit to establish a radio link to a remote base station
to establish a radio link to the remote base station to transmit the relay candidate list to
the remote base station, and to establish a radio link with a remote base station to convey
transmit a request for communication with another radiotelephone and to receive over the
radio link a direct communication instruction generated by the remote base station in
dependence on [[a]] the relay candidate list, and further configured to control the radio
communication circuit to interrupt the radio link and establish a relay radio link with the
other radiotelephone in response to the direct communication instruction[.],]
wherein the radio telephone further comprises:
a memory configured to store information about the detected
radiotelephones in the relay candidate list,
———— the controller being further configured to control the radio communication
circuit to establish a radio link to the remote base station to convey the relay candidate
list to the remote base station.

18. (canceled)

19. (Previously Presented) The radiotelephone of claim 17 wherein the controller is further configured to control the radio communication circuit to detect uplink radio transmissions from other radiotelephones and, in response to the detected uplink transmissions, to populate the relay candidate list.